FAA APPROVED

AIRPLANE FLIGHT MANUAL SUPPLEMENT
or
SUPPLEMENTAL AIRPLANE FLIGHT MANUAL
for the

GARMIN G500/G600 PRIMARY FLIGHT AND MULTIFUNCTION DISPLAY SYSTEM
as installed in

_____
Make and Model Airplane

Registration Number: _____ Serial Number: _____

This document serves as an Airplane Flight Manual Supplement or as a Supplemental Airplane Flight Manual when the aircraft is equipped in accordance with Supplemental Type Certificate SA02153LA-D for the installation and operation of the Garmin G500/G600 System. This document must be carried in the airplane at all times.

The information contained herein supplements or supersedes the information made available to the operator by the aircraft manufacturer in the form of clearly stated placards or markings, or in the form of an FAA approved Airplane Flight Manual, only in those areas listed herein. For limitations, procedures and performance information not contained in this document, consult the basic placards or markings, or the basic FAA approved Airplane Flight Manual.

FAA APPROVED BY: _____

Michael Warren
ODA STC Unit Administrator
GARMIN International, Inc
ODA-240087-CE

DATE: 1-APR-2015

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		Added Cessna autopilots to section 4.6.6.4.	
		Added detail to GAD 43 AC Ref to section 4.6.9.	
		Included select systems descriptions in section 7.	

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Section 1. GENERAL

1.1 G500/G600 Primary Flight / Multi-Function Display System

The G500/G600 System consists of a Primary Flight Display (PFD) and Multi-Function Display (MFD) housed in a single Garmin Display Unit (GDU), plus an Air Data Computer (ADC), Attitude and Heading Reference System (AHRS), and optional signal adapter (GAD).

The G500/G600 interfaces with other installed systems in the aircraft, including Garmin GPS/SBAS navigators, VHF navigation radios, datalinks, traffic systems, weather radars, audio panels, video sources, radar altimeters, ADF receivers, DME receivers, and autopilots.

The G500/G600 system can optionally provide Terrain Alerting functions and display of Terminal Procedures.

The primary function of the PFD is to provide attitude, heading, air data and navigation information to the pilot. The primary function of the MFD is to provide data which will facilitate the pilot's awareness with respect to surrounding factors that may affect the overall conduct of the flight.

The standby instruments (altimeter, airspeed, attitude, and magnetic compass) are completely independent from the PFD and will continue to operate in the event the PFD is not usable. These standby instruments should be included in the pilot's normal instrument scan and may be referenced if the PFD data is in question. A second G500/G600 system installed on the co-pilot's side does not require additional standby instruments.

1.2 System Power Sources

The G500/G600 system depends on electrical power to function. The Garmin Display Unit (GDU), Attitude and Heading Reference System (AHRS), and Air Data Computer (ADC) are directly tied to the aircraft's main or essential bus and energized when the aircraft master switch is turned on. Other systems, like the navigation equipment, weather datalink, autopilot and Adapter (GAD) are typically located on the avionics bus and may not be functional when this bus is powered off.

The major components of the G500/G600 are circuit breaker protected with resettable type breakers available to the pilot. These breakers are located at the main or essential bus circuit breaker panel and labeled as follows:

Circuit Breaker Label	Equipment
PFD	Garmin Display Unit (PFD/MFD), GDU 620
AHRS	Attitude and Heading Reference System, GRS 77
ADC	Air Data Computer, GDC 74A/B
GAD	Garmin Adapter, GAD 43/43e
STBY ATT	Electric Standby Attitude Indicator (Except L-3 Trilogy and Mid Continent SAM installations)

In dual installations the pilot side equipment is suffixed with the number 1 and the copilot side equipment is suffixed with the number 2. For example: PFD 1 and PFD 2.

Equipment that receives power from two different circuit breakers will be suffixed with the letters A and B. For example: PFD 1A and PFD 1B, or PFD 2A and PFD 2B.

1.3 Navigation Sources

The G500/G600 requires at least one Garmin GPS/SBAS navigation unit to ensure the integrity of the Attitude and Heading Reference System. The AHRS will still operate in a reversionary mode if the GPS fails, and the attitude display on the PFD will still be presented, see Paragraph 2.8. The G500/G600 HSI can be selected to display course deviation information from up to four independent sources: two GPS, and two VHF NAV. In addition, the HSI can display two simultaneous bearing pointers sourced from GPS, VHF NAV, or ADF. DME distances can be displayed adjacent to the HSI.

1.4 Synthetic Vision Technology (SVT)

SVT uses an internal terrain database and GPS location to present the pilot with a synthetic view of the terrain in front of the aircraft. The purpose of the SVT system is to assist the pilot in maintaining situational awareness with regard to the terrain and traffic surrounding the aircraft. A typical SVT display is shown below:

SVT provides additional features on the G500/G600 primary flight display (PFD) which display the following information:

- **Synthetic Terrain**; an artificial, database derived, three dimensional view of the terrain ahead of the aircraft within a field of view of approximately 25 degrees left and 25 degrees right of the aircraft heading.
- **Obstacles**; obstacles such as towers, including buildings over 200 AGL that are within the depicted synthetic terrain field of view. Powerlines are not depicted in synthetic vision.

- **Flight Path Marker (FPM)**; an indication of the current lateral and vertical path of the aircraft. The FPM is always displayed when synthetic terrain is selected for display.
- **Traffic**; a display on the PFD indicating the position of other aircraft detected by a traffic system interfaced to the G500/G600 system.
- **Horizon Line**; a white line indicating the true horizon is always displayed on the SVT display.
- **Horizon Heading**; a pilot selectable display of heading marks displayed just above the horizon line on the PFD.
- **Airport Signs**; pilot selectable "signposts" displayed on the synthetic terrain display indicating the position of nearby airports that are in the G500/G600 database.
- **Runway Highlight**; a highlighted presentation of the location and orientation of the runway(s) at the destination airport.

The synthetic terrain depiction displays an area approximating the view from the pilot's eye position when looking directly ahead out the windshield in front of the pilot. Terrain features outside this field of view are not shown on the display.

The synthetic terrain display is intended to aid the pilot awareness of the terrain and obstacles in front of the airplane. It may not provide either the accuracy or fidelity, or both, on which to solely base decisions and plan maneuvers to avoid terrain or obstacles. The synthetic vision elements are not intended to be used for primary aircraft control in place of the primary flight instruments.

1.5 Autopilot Interface

The G500/G600 may optionally be interfaced to an autopilot. The G500/G600 typically provides course and heading datum to the autopilot based on the data selected for display on the HSI. For aircraft equipped with multiple GPS/NAV systems, the G500/G600 acts as a selection hub for the autopilot's NAV mode, and the G500/G600 may also provide GPS Steering (GPSS) data. Some autopilots may have Flight Director capabilities which can be displayed on the G500/G600 Attitude Indicator as a Single Cue Flight Director.

Optionally, the autopilot can capture the pre-selected altitude or couple to the selected vertical speed if these capabilities are supported by the autopilot equipment installed. Refer to the autopilot operator's manual or autopilot Airplane Flight Manual Supplement for the proper operation of the autopilot system.

Not all autopilot systems are approved for coupling to vertical guidance on GPS based approaches; therefore consult the AFMS for the GPS/SBAS system and/or autopilot system.

1.6 Audio Panel

The G500/G600 system may be interfaced to the aircraft audio panel to provide aural alerting generated by the G500/G600 (required for TAWS-B installations).

1.7 Traffic Display

The G500/G600 system can display traffic data from interfaced traffic systems. Sources of traffic data include TIS-A traffic via the Garmin GTX Series Mode-S Transponders, TAS/TCAS traffic from various active traffic awareness systems, and ADS-B traffic from Garmin ADS-B transceivers. The information from these systems is displayed on and controlled using the MFD.

1.8 Weather Data

The G500/G600 system can display weather data from interfaced datalink systems. Sources of weather data include the Garmin GDL69 and GDL69A Sirius XM receivers, Garmin GSR 56 Iridium Transceiver, and Garmin GDL 88 ADS-B transceiver. If one of these optional weather datalink receiver is installed, the pilot will be able to access graphical and text weather products using the MFD.

The G500/G600 system can control various airborne weather radars and display their data. Compatible weather radars include Garmin GWX weather radars, as well as certain 3rd-party weather radars.

The G500/G600 system can display data from StormScope™ lightning detection systems.

1.9 Video Display

The G500/G600 can display images from up to 2 video inputs. Video images are displayed on the MFD. The G500/G600 does not provide a means to control the video source; however the digital images from the video source can be adjusted using the G500/G600.

1.10 Radar Altimeter

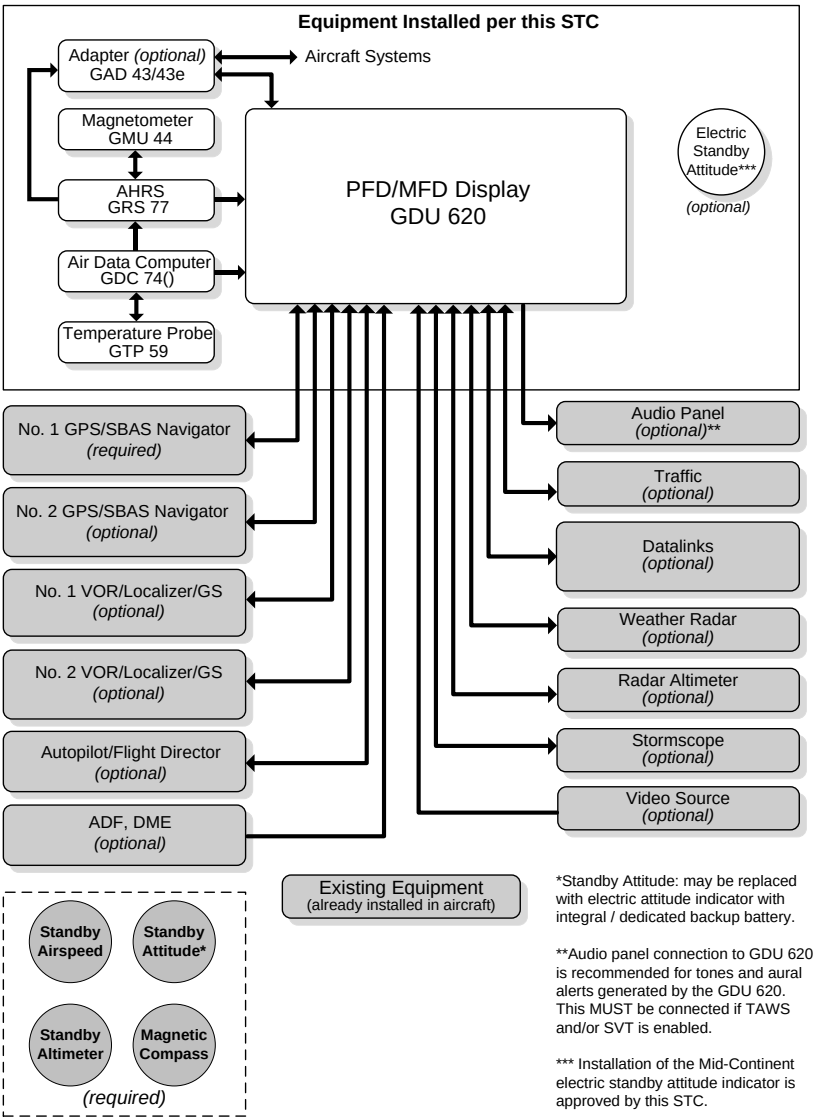
The G500/G600 supports the display of radar altitude on the PFD from certain radar altimeters.

1.11 High Speed Data Bus Interface

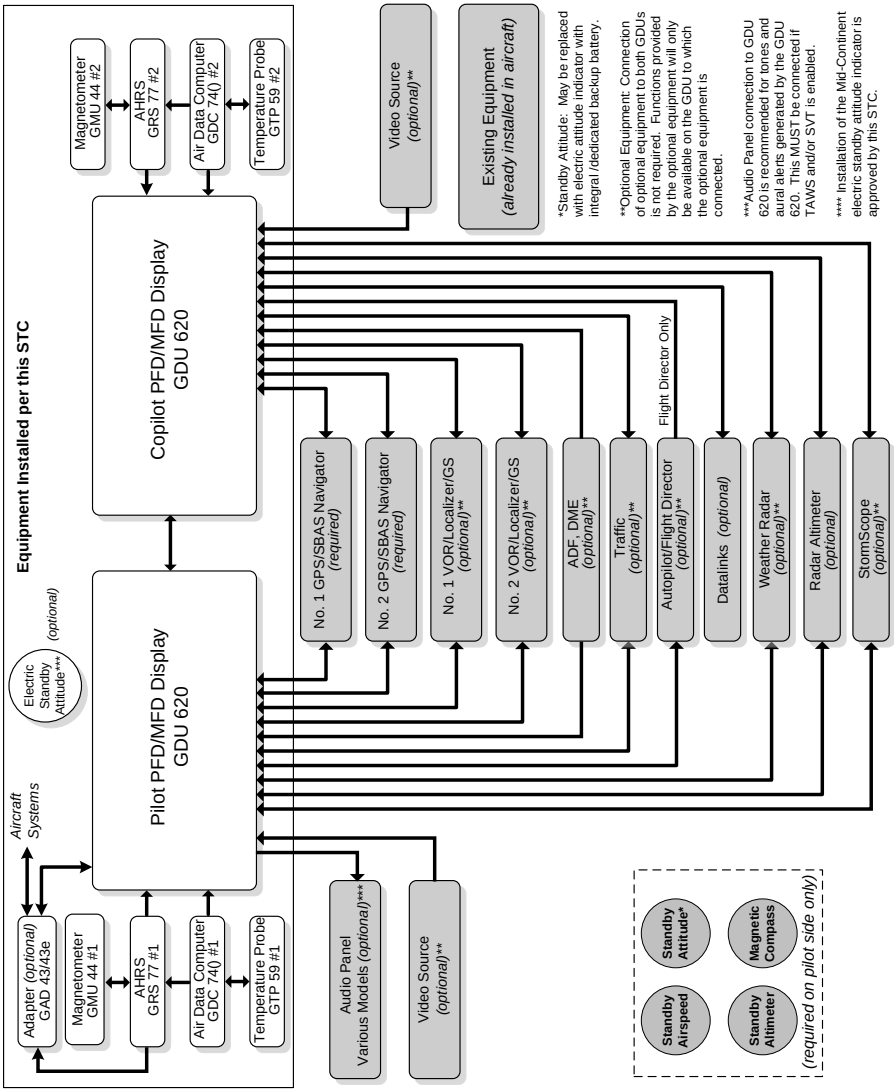
Some Garmin equipment connected to the G500/G600 system utilizes the High Speed Data Bus (HSDB) interface. HSDB is similar to an Ethernet bus and provides a high-speed interface between Garmin avionics. Like Ethernet, data between two units may be passed through intermediate "hub" units. Interfaced equipment that uses HSDB includes the GTN 6XX/7XX navigators, GDL 69 datalink receiver, GDL 88 ADS-B transceiver, GWX 68/70 weather radar, and GTS 8XX traffic systems.

The HSDB interfaces are installed to so that maximum data path redundancy is achieved. However, depending on the number of HSDB units installed, failure of one HSDB unit may result in loss of data on the G500/G600 from "downstream" HSDB units. Any loss of data will be annunciated on the G500/G600.

1.12 Single G500/G600 Operational Block Diagram



1.13 Dual G500/G600 Operational Block Diagram


Equipment Installed per this STC
Aircraft Systems
Adapter (optional) GAD 43/43e
Magnetometer GMU 44 #1
AHRS GRS 77 #1
Air Data Computer GDC 74() #1
Temperature Probe GTP 59 #1
Electric Standby Attitude*** (optional)
Pilot PFD/MFD Display GDU 620
Copilot PFD/MFD Display GDU 620
Magnetometer GMU 44 #2
AHRS GRS 77 #2
Air Data Computer GDC 74() #2
Temperature Probe GTP 59 #2
Video Source (optional)**
Existing Equipment (already installed in aircraft)
No. 1 GPS/SBAS Navigator (required)
No. 2 GPS/SBAS Navigator (required)
No. 1 VOR/Localizer/GS (optional)**
No. 2 VOR/Localizer/GS (optional)**
ADF, DME (optional)**
Traffic (optional)**
Autopilot/Flight Director (optional)**
Flight Director Only
Datalinks (optional)
Weather Radar (optional)**
Radar Altimeter (optional)
StormScope (optional)**
Audio Panel Various Models (optional)***
Video Source (optional)**
Standby Attitude*
Standby Airspeed
Magnetic Compass
Standby Altimeter
(required on pilot side only)
*Standby Attitude: May be replaced with electric attitude indicator with integral /dedicated backup battery.
**Optional Equipment: Connection of optional equipment to both GDUs is not required. Functions provided by the optional equipment will only be available on the GDU to which the optional equipment is connected.
***Audio Panel connection to GDU 620 is recommended for tones and aural alerts generated by the GDU 620. This MUST be connected if TAWS and/or SVT is enabled.
**** Installation of the Mid-Continent electric standby attitude indicator is approved by this STC.

1.14 Definitions

The following terminology is used within this document:

ADC: Air Data Computer
ADF: Automatic Direction Finder
ADS-B: Automatic Dependent Surveillance Broadcast
AHRS: Attitude & Heading Reference System
AUX: Auxiliary
BARO: Barometric Pressure
BRG: Bearing
CDI: Course Deviation Indicator
CRS: Course
DME: Distance Measuring Equipment
FD: Flight Director
FPM: Flight Path Marker
GDU: Garmin Display Unit
GPS: Global Positioning System
GPSS: GPS Roll Steering
HDG: Heading
HSI: Horizontal Situation Indicator
IFR: Instrument Flight Rules
IMC: Instrument Meteorological Conditions
LOI: Loss of Integrity
MFD: Multi Function Display
PFD: Primary Flight Display
SBAS: Space-based Augmentation System
SD: Secure Digital
SVT: Synthetic Vision Technology
TAS: Traffic Awareness System
TAWS: Terrain Awareness and Warning System (a TSO-C151b function)
TCAS: Traffic Collision and Avoidance System
TIS: Traffic Information Service
VFR: Visual Flight Rules
VMC: Visual Meteorological Conditions
V/S: Vertical Speed

Section 2. LIMITATIONS

2.1 Cockpit Reference & Pilot's Guide

The Garmin G500/G600 Cockpit Reference Guide P/N 190-00601-03, Revision G or later appropriate revision *must* be immediately available to the flight crew.

2.2 System Software Requirements

The G500/G600 must utilize the following or later FAA approved software versions for this AFMS revision to be applicable:

Component	Identification	Software Version
GDU 620	PFD/MFD	7.00
GRS 77	AHRS	3.04

2.3 Moving Map

The moving map on the MFD is advisory in nature and is shall not be used for course guidance. The moving map on the MFD must be cross checked for correctness against the PFD HSI, published charts, or other approved sources of navigation information.

2.4 Database Cards

Databases identified as intended for helicopter use shall not be used. These databases are identified by the word "HELI" or "HELICOPTER" in their title.

2.5 AHRS Operational Area

The AHRS used in the G500/G600 is limited in its operational area: IFR Operations are prohibited north of 72°N and south of 70°S latitudes. In addition, IFR operations are prohibited in the following four regions:

1) North of 65° North latitude between longitude 75° W and 120° W
2) North of 70° North latitude between longitude 70° W and 128° W
3) North of 70° North latitude between longitude 85° E and 114° E
4) South of 55° South latitude between longitude 120° E and 165° E

Loss of the G500/G600 heading and attitude may occur near the poles, but this will not affect the GPS track or standby attitude indicator.

2.6 Magnetic Variation Operational Area

IFR operations are prohibited in areas where the magnetic variation is greater than 99.9 degrees East or West.

2.7 Navigation Angle

The GDU 620 Navigation Angle, which defines whether the GDU 620 headings are referenced to True or Magnetic North can be set to either True or Magnetic on the AUX page. The Navigation Angle set in the GDU 620 shall be set by the pilot to match that which is set on all GPS/SBAS navigators interfaced to the unit.

2.8 AHRS Normal Operating Mode

The Attitude and Heading Reference System integrity monitoring function requires GPS and Air Data to be provided to the AHRS. Note: Attitude will remain valid if one of these systems becomes inoperative.

Flight in IMC is not authorized unless the AHRS is receiving valid GPS *and* valid Air Data. The G500/G600 monitors these integrity systems automatically and will alert the pilot when the AHRS is not receiving GPS or Air Data.

Note: In dual GPS installations, only one GPS needs to be available to the AHRS for IFR flight.

2.9 Airspeed Limitations and Indicator Markings

The original type design approved airspeed limitations remain in effect. The airspeed limitations stated in the AFM/POH, standby airspeed indicator and/or airspeed limitation placards must be observed.

The G500/G600 airspeed tape displays red/white striping to indicate the maximum allowable airspeed ($V_{NE}/V_{MO}/M_{MO}$). This maximum allowable airspeed display is configured to indicate the appropriate maximum allowable airspeed for the airplane, including variations for altitude or Mach number.

The G500/G600 airspeed tape displays a red low-speed awareness band at the lower range of the airspeed tape. This low-speed awareness band is configured to a fixed value. It does not indicate an actual or calculated stall speed and does not adjust with variations in aircraft weight or other factors.

All other G600 airspeed tape indications are configured to indicate the original type design limitations. The G500/G600 airspeed tape does not adjust these additional markings (including V_{NO}, landing gear, or flap speed limitations) for variations with aircraft weight, altitude, or other factors.

2.10 Aerobatic Maneuvers

Do not conduct aerobatic maneuvers if uninterrupted attitude information is required on the PFD.

2.11 Course Pointer Auto Slewing

The G500/G600 HSI will auto slew, i.e. automatically rotate the GPS course pointer to the desired course defined by each GPS leg. The system will also auto slew the VHF NAV course pointer when the CDI transitions to a LOC setting if an ILS, LOC, LOC BC, LDA, or SDF approach is loaded in the GPS/SBAS navigator.

The VHF NAV (green) course pointer will only auto slew if the approach is loaded in the navigator, a LOC frequency is loaded in the active NAV frequency, and *then* the HSI source is changed to the corresponding VHF NAV for the approach. Back Course approaches will auto slew to the reciprocal course.

The system is not capable of automatically setting the inbound VHF NAV course pointer if an approach is not loaded in the GPS/SBAS Navigation System. Auto slewing the VHF NAV course pointer to the correct selected course is a database dependent function.

The pilot shall confirm the inbound course pointer is set to the proper course prior to initiating any transition on any VHF NAV approach.

2.12 Synthetic Vision Technology

The use of the synthetic vision display elements alone for aircraft control without reference to the G500/G600 primary flight instruments or the aircraft standby instruments is prohibited.

The use of the synthetic vision display alone for navigation, or obstacle, terrain, or traffic avoidance is prohibited.

2.13 Autopilot Interface

Flight director commands on PFD 2 are repeated from PFD 1. When utilizing the flight director display on PFD 2, the pilot shall ensure that the CDI source and BARO settings on PFD 2 match those on PFD 1.

For installations where the GAD 43 provides attitude information to the autopilot, the GAD 43 autopilot disconnect mechanism shall be tested and operational before each flight using the autopilot.

2.14 Terrain Proximity Function

The G500/G600 terrain configuration is indicated on the dedicated terrain page of the MAP group. "TERRAIN PROXIMITY" will be displayed as the page title if this function is configured. Terrain information appears on the map and terrain display pages as red and amber and is depicted for advisory use only. Obstacle and wire information appears on the map and terrain display pages as red, amber, and white and is depicted for advisory use only. Aircraft maneuvers and navigation must not be predicated upon the use of the terrain display. Terrain, obstacle, and wire information is advisory only and is not equivalent to warnings provided by TAWS.

The terrain display is intended to serve as a situational awareness tool only. By itself, it may not provide either the accuracy or the fidelity on which to base decisions and plan maneuvers to avoid terrain or obstacles.

2.15 TAWS Function [GDU 620 Units with internal TAWS]

Only the G600 system optionally contains Class B TAWS, a TSO-C151b certified function. The G600 terrain configuration is indicated on the dedicated terrain page of the MAP group. "TAWS-B" will be displayed as the page title if this function is configured. Pilots are authorized to deviate from their current ATC clearance to the extent necessary to comply with TAWS warnings. Navigation shall not be predicated upon the use of TAWS.

To avoid unwanted alerts, TAWS shall be inhibited when landing at an airport that is not included in the airport database.

2.16 Datalinked Weather Display (XM, GFDS, FIS-B weather)

This limitation applies to datalinked weather products from SiriusXM via a GDL 69/69A, FIS-B via a Garmin ADS-B receiver, and Connext via a GSR 56.

Do not use data link weather information for maneuvering in, near, or around areas of hazardous weather. Information provided by data link weather products may not accurately depict current weather conditions.

Do not use the indicated data link weather product age to determine the age of the weather information shown by the data link weather product. Due to time delays inherent in gathering and processing weather data for data link transmission, the weather information shown by the data link weather product may be significantly older than the indicated weather product age.

Do not rely solely upon data link services to provide Temporary Flight Restriction (TFR) or Notice to Airmen (NOTAM) information. Not all TFRs and NOTAMS may be depicted on the G500/G600.

2.17 Traffic Display

Traffic may be displayed on the G500/G600 System when connected to an approved optional TCAS, TAS, TIS, or ADS-B traffic device. These systems are capable of providing traffic monitoring and alerting to the pilot. Traffic shown on the display may or may not result in traffic alerts. The display of traffic is an aid to visual acquisition and shall not be utilized for aircraft maneuvering.

2.18 Active Weather RADAR

RADAR is broadcasting energy while in Weather or Ground mapping modes. If the G500/G600 system is configured to control an airborne weather radar unit, observe all safety precautions, including:

- Do not operate in the vicinity of refueling operations.
- Do not operate while personnel are in the vicinity (approximately 20 feet) of the radar sweep area.

WARNING

If a radar system is installed, it generates microwave radiation and improper use, or exposure, may cause serious bodily injury.
DO NOT OPERATE THE RADAR EQUIPMENT UNTIL YOU HAVE READ AND CAREFULLY FOLLOWED THE SAFETY PRECAUTIONS AND INSTRUCTIONS in the USER MANUAL.

2.19 StormScope® Display

StormScope® lightning information displayed by the G500/G600 is limited to supplemental use only. The use of the StormScope® lightning data on the display for hazardous weather (thunderstorm) penetration is prohibited. StormScope® lightning data on the display is intended only as an aid to enhance situational awareness of hazardous weather, not penetration. It is the flight crew's responsibility to avoid hazardous weather using official weather data sources.

2.20 Kinds of Operations

Unless placarded as limited to VFR only operations, G500/G600 equipment installed in a certified aircraft is approved for Day and Night / VFR and IFR operations in accordance with 14 Code of Federal Regulations Part 91, Part 121, and Part 135 when appropriately maintained.

The table below lists the minimum fully functional G500/G600 System Equipment ** required for IFR flight operations:

Equipment	Number installed	VFR	IFR
Primary/Multi Flight Display	1 or 2	1a*	1
Garmin GPS/SBAS Navigator	1 or 2	-	1
Attitude / Heading Unit (AHRS)	1 or 2	-	1
Air data computer (ADC)	1 or 2	1a*	1
Magnetometer (GMU)	1 or 2	-	1
Standby Attitude Indicator	1	-	1
Standby Airspeed Indicator	1	1b	1
Standby Altimeter	1	1b	1
Magnetic Compass	1	1	1

* For VFR operations under 14 CFR Part 91, the aircraft shall have one source of altitude and airspeed information. This may be from either the PFD or the standby instruments. (i.e. all "1a" items or all "1b" items from the table above)

** For IFR flight a fully functional G500/G600 system shall not generate system alerts, which indicate faults within the system or any interfaced equipment.

2.21 KFC 275/325 Altitude Preselect

When the altitude preselect option is installed with KFC 275/325 autopilots, SOFT RIDE (SR) mode shall be disengaged during altitude capture mode (ALTC). The following placard must be installed near the autopilot mode controller or above PFD 1:

"DISENGAGE SOFT RIDE DURING ALTITUDE CAPTURE (ALTC)"

2.22 Type Ratings

Unless otherwise authorized by this section, operations are prohibited in aircraft that require a type rating under 14 CFR 61.31(a).

2.23 Electronic Standby Instrument Power

The independent power source for the electronic standby instrument(s) shall be verified to be operational before flight, or the electronic standby(s) must be considered inoperative. For the verification procedure, refer to the approved Airplane Flight Manual and/or Instructions for Continued Airworthiness for the independent power source.

2.24 Electronic Flight Bag (EFB) Applications

Class 3 EFB applications have not been evaluated as part of this STC. Use of the system for EFB applications (such as the moving map or electronic charts) is not authorized if additional evaluation or operational approval is required unless that approval has been obtained.

2.25 Surface Operations

SafeTaxi or Chartview functions shall not be used as the basis for ground maneuvering. SafeTaxi and Chartview functions do not comply with the requirements of AC 20-159 and are not qualified to be used as an airport moving map display (AMMD). SafeTaxi and Chartview use is limited to airport surface orientation to improve flight crew situational awareness during ground operations.

2.26 MFD Video Display

Video images displayed on the MFD are intended for use as an aid to situational awareness only. Aircraft maneuvering based solely on the MFD video display is prohibited.

Section 3. EMERGENCY PROCEDURES

3.1 Emergency Procedures

3.1.1 PFD 1 Failure

PFD 1 failure is indicated by the loss of displayed information on the PFD, including blank, frozen, or unresponsive display.

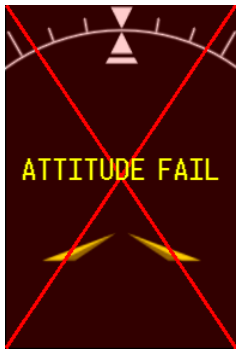
1. Use standby flight instruments for attitude, airspeed, altitude, and heading reference.
2. Refer directly to navigation source for navigation information (such as GPS).

   If autopilot is engaged:

   3. Verify autopilot mode and cross check against standby flight and navigation data.

3.1.2 AHRS Failure

Attitude and Heading Reference System (AHRS) failure is indicated by removal of the sky/ground presentation, a red X, and a yellow "ATTITUDE FAIL" on the PFD. Rate-of-turn information (heading trend vector) will not be available. A heading failure will also occur as described in Section 3.2.1.



1. Use Standby Attitude Indicator.
2. Seek VFR conditions or land as soon as practical.

3.1.3 Air Data Computer (ADC) Failure

Air Data Computer failure is indicated by a red X and yellow text over the airspeed, altimeter, vertical speed, TAS and OAT displays. Some derived functions, such as true airspeed and wind calculations will also be lost. If valid GPS data is available, the PFD will automatically revert to display GPS calculated altitude relative to mean sea level. This GPS altitude is displayed above the altitude tape.

1. Use Standby Airspeed Indicator and Altimeter
2. Seek VFR conditions or land as soon as practical

If ADC 1 has failed and PFD 1 AIR DATA switch is installed:

3. PFD 1 AIR DATA switch – Select ADC 2

NOTE

ALT NO COMP and IAS NO COMP alerts will be present.

3.1.4 Loss of Electrical Power

In the event of a total loss of electrical power, the G500/G600 system will cease to operate and the pilot must utilize the standby instruments to fly the aircraft.

3.1.5 Loss of Electrical Power to 3-inch Electric Standby Attitude Indicator (flashing amber STBY PWR light) (MidContinent 4300 Series)

When a 3-inch electric standby attitude indicator is installed, loss of primary electrical power to the attitude indicator is annunciated by a flashing amber light on the indicator. The attitude indicator is operating on backup battery power, and pilot action is required for the gyro to continue operating.

1. Press STBY PWR button on the indicator one time.
2. Verify that the flashing amber light extinguishes.
3. Verify that the red gyro warning flag is not displayed.
4. Seek visual meteorological conditions (VMC) or land as soon as practical (operation of standby attitude indicator is limited by battery life).

WARNING

Do not press the STBY PWR button a second time after the flashing amber light extinguishes. This will turn off the backup battery and the red gyro warning flag will be displayed. If the STBY PWR button is inadvertently pressed and the red gyro warning flag is displayed, press the STBY PWR button again to return to battery power operation (red gyro warning flag should not be displayed).

3.1.6 Loss of Electrical Power to 2-inch Electric Standby Attitude Indicator (flashing or steady amber STBY text) (MidContinent 4200 Series)

When a 2-inch electric standby attitude indicator is installed, loss of primary electrical power to the attitude indicator is annunciated by amber STBY text on the Annunciation Control Unit. The attitude indicator is operating on backup battery power, and pilot action may be required for the gyro to continue operating.

If the amber STBY text is flashing (manual operation):

1. Press the STBY PWR button one time.
2. Verify that the amber STBY text is steadily illuminated.
3. Verify that the red gyro warning flag is not displayed.
4. Seek visual meteorological conditions (VMC) or land as soon as practical (operation of standby attitude indicator is limited by battery life).

If the amber STBY text is steadily illuminated (automatic operation):

1. Verify that the red gyro warning flag is not displayed.
2. Seek visual meteorological conditions (VMC) or land as soon as practical (operation of standby attitude indicator is limited by battery life).

WARNING

Do not press the STBY PWR when the amber STBY text is steadily illuminated. This will turn off the backup battery and the red gyro warning flag will be displayed. If the STBY PWR button is inadvertently pressed and the red gyro warning flag is displayed, press the STBY PWR button again to return to battery power operation (red gyro warning flag should not be displayed).

3.1.7 TAWS WARNING

Red PULL UP annunciator on PFD and aural "PULL UP":

1. Disconnect Autopilot.
2. Initiate maximum power climb at best angle of climb airspeed (V_X).

After warning ceases:

3. Climb and maintain safe altitude.
4. Advise ATC of altitude deviation, if appropriate.

NOTE

Only vertical maneuvers are recommended, unless either operating in visual meteorological conditions (VMC), or the flight crew determines, based on all available information, that turning in addition to the vertical escape maneuver is the safest course of action, or both.

3.2 Abnormal Procedures

3.2.1 Heading Failure

Heading failure is indicated by replacement of the digital heading display with amber "HDG" text and a red X.

If valid GPS ground track is available, it will automatically be displayed in place of heading. The HSI heading bug and course pointer will continue to function normally, using GPS ground track as a reference instead of magnetic heading.

If GPS track is not available:

1. Use standby compass for heading reference.
2. Verify selected course using "CRS" button and PFD knob.

CAUTION

No directional references will be displayed on HSI. The heading bug will be removed, and the course pointer will remain fixed at the top of the HSI regardless of aircraft heading. Course deviation indications will behave similar to a traditional CDI. VOR deviations will be relative the selected course with a TO/FROM indication. Localizer deviations will not be affected by the selected course, and reverse sensing will occur when tracking inbound on a localizer back course.

3.2.2 GPS Data Failure

GPS data failure may be indicated by any or all of following:

- Loss of GPS course deviation information on HSI
- Amber "LOI" text on the HSI
- Amber "NO GPS POSITION" text on the MFD moving map
- Loss of waypoint bearing or distance information

1. Select alternate GPS source, if available, by pressing "1-2" softkey on PFD.

If alternate GPS source is not available:

2. Select alternate navigation source using "CDI," "1-2," or "BRG" softkeys on PFD, or refer directly to external navigation data.

3.2.3 Navigation Data Failure (VOR/LOC/GS/ADF)

Navigation data failure may be indicated by any or all of following:

- Loss of course deviation information on HSI
- Loss of glideslope/glidepath information on PFD
- Loss of bearing pointer on HSI

1. Select alternate navigation source using "CDI," "1-2," or "BRG" softkeys on PFD, or refer directly to external navigation data.

3.2.4 Synthetic Vision (SVT) Failure

Several data sources are required to display SVT on the PFD (GPS, terrain database, attitude information, etc.). If any of these required data sources become unreliable or unavailable, SVT will automatically be removed, and the PFD will revert to the standard display of blue sky over brown ground. If there is a discrepancy between the SVT display and the actual terrain around the aircraft, SVT should be turned off manually.

To turn off SVT:

1. Press the "PFD" softkey on the PFD.
2. Press the "SYN VIS" softkey to turn off SVT.

3.2.5 Electrical Load Shedding

The following equipment is considered non-essential. If it becomes necessary to reduce electrical load (for example, during loss of generators or alternators), power to these units may be removed in the order listed.

1. PFD 2 circuit breaker(s) [if installed] – PULL
2. AHRS 2 circuit breaker(s) [if installed] – PULL
3. ADC 2 circuit breaker(s) [if installed] – PULL
4. GAD circuit breaker(s) [if installed] – PULL

3.2.6 TAWS Caution

TAWS Cautions include an amber TERRAIN or OBSTACLE or WIRE annunciator on the PFD and one of the following aural messages:

- "Terrain Ahead" or "Caution Terrain"
- "Obstacle Ahead" or "Caution Obstacle"
- "Wire Ahead" or "Caution Wire"
- "Too Low, Terrain"
- "Sink Rate"
- "Don't Sink"

If a TAWS Caution occurs, take corrective action until the alert ceases. Stop descending or initiate either a climb or a turn, or both as necessary, based on analysis of all available instruments and information.

3.2.7 GAD 43 AC Reference Lost of Reference Timeout Fault

If "AC Reference Lost" or "Reference Timeout Fault" message is present the reference signal used by the autopilot is unavailable and the autopilot may deviate from the intended path or may disconnect.

1. Immediately disengage the autopilot and do not re-engage.

3.3 Warnings, Cautions, and Advisories

The following tables show the color and significance of the warning, caution, and advisory messages which may appear on the G500/G600 displays.

NOTE

The G500/G600 Cockpit Reference Guide and the G500/G600 Pilot's Guide contain detailed descriptions of the annunciator system and all warnings, cautions and advisories.

3.3.1 Warning annunciations – Red		
Annunciation	*Pilot Action*	*Cause*
ATTITUDE FAIL	Use Standby Attitude.	Display system is not receiving attitude reference information from the AHRS; accompanied by the removal of sky/ground presentation and a red X over the attitude area.
AIRSPEED FAIL	Use Standby Airspeed.	Display system is not receiving airspeed input from the air data computer; accompanied by a red X through the airspeed display.
ALTITUDE FAIL	Use Standby Altitude.	Display system is not receiving altitude input from the air data computer; accompanied by a red X through the altimeter display.
VERT SPD FAIL	Cross check instruments.	Display system is not receiving vertical speed input from the air data computer; accompanied by a red X through the vertical speed display.
HDG	Use Standby Magnetic Compass or GPS track information.	Display system is not receiving valid heading input from the AHRS; accompanied by a red X through the digital heading display.
Red X	Reference the data source or alternate equipment.	A red X through any display field, indicates that display field is not receiving data or is corrupted.

3.3.2 Caution annunciations – Yellow		
Annunciation	*Pilot Action*	*Cause*
CHECK ATTITUDE Autopilot will automatically disconnect. Note: Only appears with the installation of an optional GAD 43 adapter	Fly the aircraft manually and crosscheck GDU 620 attitude indication with standby attitude indicator and other sources of attitude information (airspeed, heading, altitude, etc.)	The GDU 620 attitude monitors have detected an AHRS malfunction, or the inability to actively monitor the AHRS output.
MISCOMP (flag displayed on PFD attitude, airspeed, or altitude indicators)	Cross-check the flagged information against other sources to identify erroneous information.	Difference detected between displayed attitude, airspeed, or altitude (dual installations only).
AHRS ALIGN – Keep Wings L**e**vel	Limit aircraft attitude to ±10º bank and ±5º pitch as AHRS Aligns - OK to taxi.	Attitude and Heading Reference System is aligning. AHRS may not align with excessive pitch/bank angles.
NO GPS POSITION	If the system is configured with dual GPS, press the 1-2 button.	GPS data on the selected system is no longer valid. The Moving Map and associated data are not updating.
TRAFFIC	Visually acquire the traffic to see and avoid.	The interfaced traffic system has determined that nearby traffic may be a threat to the aircraft.
No Traffic Data	Use vigilance, as the traffic sensor is not able to detect traffic.	The configured traffic system is not able to detect traffic and / or provide the pilot with any traffic awareness.
NO AP DATA	Verify autopilot mode of operation using alternate means.	Autopilot mode of operation is not available.
TER N/A, TER FAIL	Use vigilance, terrain depiction is no longer provided.	Database errors or lack of required GPS position.

TAWS N/A, TAWS FAIL	Use vigilance, terrain depiction and TAWS alerting is no longer provided.	Database errors or lack of required GPS position.
NO DATA	Displayed on dedicated display pages. Indicates that data from the interfaced sensor is not available	Loss of connection or failure of interfaced sensor.

3.3.3 Advisories – White	
Annunciation	*Pilot Action*
Various Alert Messages may appear under the MFD - ALERTS soft key.	View and understand all advisory messages. Typically, they indicate communication issues within the G500/G600 System. Refer to the G500/G600 Cockpit Reference for appropriate pilot or service action.
A/C Reference Lost or Reference Timeout Fault	The A/C reference signal used for attitude provided to the autopilot has been lost. Disconnect the autopilot and do not re-engage.

Section 4. NORMAL PROCEDURES

Refer to the Garmin G500/G600 PFD/MFD System Cockpit Reference Guide P/N 190-00601-03 or G500/G600 Pilot's Guide P/N 190-00601-02, for normal operating procedures. This includes all Primary Flight Display and Multi-Function Display information.

Although intuitive and user friendly, the G500/G600 System requires a reasonable degree of familiarity to avoid becoming too engrossed at the expense of basic instrument flying in IMC and basic see-and-avoid procedures in VMC. Pilot workload will be higher for pilots with limited familiarity in using the unit in an IFR environment, particularly without the autopilot engaged. Garmin provides training material with the Cockpit Reference Guide and the detailed Pilot's Guide. Pilots should take full advantage of these training tools to enhance system familiarization.

4.1 PFD Knob & PFD Soft Keys

The basic PFD controls are on the side and bottom of the PFD, next to and beneath the PFD display. The rotary knob performs the function annunciated on the display just to the upper left of the HSI: HDG, CRS, ALT, V/S, or BARO. If no function is annunciated then the knob is providing a HDG function. Assigning the function of the knob is done by pressing/releasing one of the dedicated function buttons to the left of the display. The knob defaults back to HDG if it is not rotated for a period of 10 seconds. The Garmin G500/G600 PFD/MFD System Cockpit Reference Guide describes each function and its operation.

The soft keys at the bottom of the PFD display are used to configure the course data displayed in the HSI (CDI button, 1-2 button) and select the optional bearing pointers (BRG1 and BRG2 button) which may be overlaid in the HSI presentation on the PFD. The soft keys operate by press and release. Note: In Dual G500/G600 installations, the CDI key located on the GNS units is not operational. Consult the Garmin G500/G600 PFD/MFD System Cockpit Reference Guide for a complete description.

The units and markings on the PFD are not user configurable. They match the units as specified in the aircraft's FAA approved Airplane Flight Manual and standby instruments. Display and control of the airspeed references (V_R, V_X, V_Y, and GLIDE) are made via the AUX page of the MFD; consult the Garmin G500/G600 Cockpit Reference Guide for description and operation of these references.

4.2 MFD Knobs & MFD Soft Keys

The MFD controls are on the side and bottom of the MFD, next to and beneath the MFD display. The rotary knobs scroll through various page groups and pages of the MFD and manipulate data and settings by pressing the knob to activate a cursor.

Soft keys at the bottom of the display allow for some quick functions to be performed on each page. The soft keys operate by press and release. More detailed configuration is typically available by pressing the MENU button, which is on the right side of the display.

Pressing and holding down the CLR key is a shortcut to get back to the main map page on the MFD. This can be used as a quick way back, or when the pilot has selected a submenu within the system. The functions available under the MFD are explained in the Garmin G500/G600 Cockpit Reference Guide.

4.3 Altitude Synchronization

The pilot must synchronize the PFD BARO setting and the Standby Altimeter Kollsman window with the local altimeter setting as appropriate. In dual installations if synchronization between the units is enabled, setting either PFD will adjust both PFDs, but the standby must still be set by the pilot. Reference the Garmin G500/G600 Cockpit Reference Guide for a complete description and the usage of synchronization in dual installations.

4.4 Electric Standby Attitude Gyro (Mid Continent 4200 and 4300 Series)

When an electric standby attitude gyro is installed, test the backup battery before takeoff.

1. Apply power to electric standby attitude gyro and allow the gyro to reach operating speed (approximately 5 minutes).
2. Verify that the red gyro flag is not in view.
3. Press and hold the STBY PWR button until the amber annunciator begins to flash.
4. Verify that the green annunciator is displayed continuously and the red annunciator is not displayed for the duration of the test (approximately 1 minute).

CAUTION

The standby attitude gyro must be considered inoperative if the red annunciator is displayed during the test.

4.5 Synthetic Vision Technology

The SVT system may be turned on or off, as desired. To access the synthetic vision system softkey menu, press the PFD softkey on the GDU 620, followed by the SYN VIS softkey. Synthetic vision terrain, horizon headings, and airport signs can be toggled on and off from this menu. Press the BACK softkey to return to the root PFD menu.

4.6 Autopilot Operations with the G500/G600 System

The G500/G600 System offers various integration capabilities dependent mainly upon the type of autopilot installed in a particular aircraft.

The G500/G600 installation in this aircraft provides the following autopilot integration capabilities (appropriate boxes will be checked):

- ☐ This installation *does not* interface with the autopilot (basic wing leveling autopilot or no autopilot is installed in the aircraft).
- ☐ Course / NAV Selection coupling to the autopilot.
- ☐ Heading Bug coupling capability to the autopilot.
- ☐ Roll Steering emulated via heading mode.
- ☐ Roll Steering capable autopilot.
- ☐ Altitude Pre-Selector integrated with the autopilot.
- ☐ Vertical speed bug integrated with the autopilot
- ☐ Flight Director display driven from external autopilot or FD computer.
  - ☐ Flight Director is not available with Synthetic Vision enabled.
- ☐ A GAD 43 Adapter is installed in this aircraft
  - ☐ GAD 43 provides attitude to the autopilot
  - ☐ GAD 43 provides yaw rate to the yaw damper
  - ☐ GAD 43 provides baro correction to the altitude preselector
- ☐ GDU 620 provides attitude / air data to autopilot

4.6.1 Attitude and Rate Based Autopilots

Attitude-based autopilots may be driven by the standby gyro, a remote mounted gyro, the GDU 620, or the GAD 43 adapter. If the GDU 620 or GAD 43 is providing attitude to the autopilot, it will be indicated in section 4.6 above. Otherwise, if the attitude-based autopilot is receiving attitude from the standby or a remote gyro, the autopilot attitude input is independent of the attitude displayed on the PFD.

Rate-based autopilots are driven by a turn coordinator gyro which may be mounted in the instrument panel or remotely mounted. The autopilot rate input is independent of the G500/G600 system.

The pilot must understand the autopilot system inputs to detect faults and capabilities with inoperative equipment. Refer to the autopilot flight manual for operational information.

4.6.2 Course / NAV Selection coupling to the autopilot

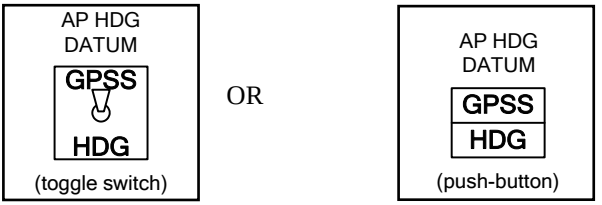
When operating the autopilot in NAV mode, the deviation information from the installed navigation sources (i.e. GPS1, GPS2, NAV1, NAV2) is switched via the G500/G600 PFD display. Whatever is displayed on the HSI is the NAV source the autopilot is following. Most autopilots also use the course datum to determine the best intercept angles when operating in NAV mode.

4.6.3 Heading Bug coupling capability to the autopilot

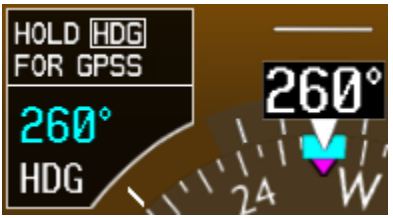
When operating the autopilot in HDG mode, the difference between the HDG bug location on the HSI and the actual aircraft heading creates an error signal which the autopilot will minimize by turning in the direction of the bug. If the bug is turned more than 180 degrees, the autopilot may turn the airplane in the opposite direction of the desired turn.

4.6.4 GPSS emulated via HDG mode

For autopilots that do not support digital GPSS signals, GPSS functionality may be emulated by operating the autopilot in HDG mode and selecting GPSS on the PFD. Depending on the installation, GPSS mode may be toggled via an external switch located near the autopilot control panel, or by pressing and holding the HDG button on the PFD. If an external switch is installed, it will be either a toggle or push-button switch as depicted below.



If the installation uses the HDG button on the PFD, the PFD Knob Mode Indicator is expanded to label the button function.



GPSS OFF

GPSS ON

When GPSS is selected on the PFD, the heading bug on the HSI changes to a hollow outline and a crossed-out heading bug appears in the PFD Knob Mode Indicator, indicating that the autopilot is not coupled to the heading bug. The bug is still controllable and may still be used by the pilot for reference.

When GPSS is selected on the PFD, GPSS is annunciated in the lower left portion of the PFD. The GPSS mode annunciation depends on the location of the NAV STATUS information, as shown below.

NAV STATUS STYLE 1

NAV STATUS STYLE 2

NOTE
GPSS mode is selectable from PFD 2, but GPSS is not annunciated on PFD 2. The GPSS commands to the autopilot are based on the GPS source displayed on PFD 1.

When GPSS is selected on the PFD, GPSS turn commands are converted into a heading error signal to the autopilot. When the autopilot is operated in HDG mode, the autopilot will fly the turn commands from the GPS navigator selected on PFD 1.

If the GPSS data is invalid (for example, if there is no active GPS leg) or the selected HSI source on PFD 1 is not GPS, the annunciated GPSS text will be yellow and a zero turn command will be sent to the autopilot.

4.6.5 Roll Steering capable autopilots

If the autopilot is already designed to receive Roll Steering information, the data is transmitted via a digital communications bus from the G500/G600 to the autopilot. The G500/G600 receives this data from the GPS. In dual GPS installations, the G500/G600 sends Roll Steering information for the GPS which is currently selected for use via the PFD 1-2 button.

4.6.6 Selected Altitude Bug Coupling

When installed appropriately, certain autopilots may be coupled to the PFD selected altitude bug for altitude preselect and capture. Except as described in this section, refer to the autopilot AFMS and/or Pilot's Guide for autopilot system operation.

4.6.6.1 S-Tec Autopilots

To preselect and capture a selected altitude:

1. Select the desired altitude with the PFD selected altitude bug.
2. Press/hold VS then press ALT on the autopilot programmer computer to arm altitude hold mode.

4.6.6.2 Collins Autopilots

To preselect and capture a selected altitude:

1. Select the desired altitude with the PFD selected altitude bug.
2. Select ALT SEL mode on the autopilot flight control panel.

CAUTION

Changing the selected altitude bug while ALT SEL mode is selected may result in autopilot mode changes. Verify the autopilot mode after changing the selected altitude.

4.6.6.3 Bendix/King Autopilots

To preselect and capture a selected altitude:

1. Select the desired altitude with the PFD selected altitude bug.
2. Press and hold the ALT button on the PFD to arm or disarm the selected altitude.

NOTE

When the selected altitude is armed for capture, ALT is displayed in white text in the upper right corner of the PFD. When altitude capture mode is active, ALTC is displayed in green text in the upper right corner of the PFD. When a KA 315 annunciator panel is installed, the "ALT ARM" annunciator on this panel will not be operative.

NOTE

KFC 200/250 autopilots will inhibit glideslope (GS) mode if altitude capture (ALTC) mode is engaged during glideslope intercept.

CAUTION

Changing the selected altitude bug while ALTC mode is active will result in cancellation of ALTC mode. Verify the autopilot mode after changing the selected altitude.

4.6.6.4 Cessna Autopilots

To preselect and capture a selected altitude:

1. Select the desired altitude with the PFD selected altitude bug.
2. Press and hold the ALT button on the PFD to arm or disarm the selected altitude.

NOTE

When the selected altitude is armed for capture, ARMED is displayed in white text next to the selected altitude.

4.6.7 Vertical Speed Bug Coupling

Certain autopilots may be coupled to the PFD vertical speed bug for maintaining a selected vertical speed. Except as described in this section, refer to the autopilot AFMS and/or Pilot's Guide for autopilot system operation.

4.6.7.1 S-Tec Autopilots

To select and maintain a vertical speed:

1. Select the desired vertical speed with the PFD vertical speed bug.
2. Press VS on the autopilot programmer computer to engage vertical speed mode.

NOTE

The selected vertical speed will automatically be reduced towards zero when approaching the selected altitude bug. AUTO will appear in the vertical speed PFD knob mode indicator when vertical speed is being reduced automatically. Manually changing the selected vertical speed while AUTO is displayed will cancel automatic vertical speed reduction.

4.6.7.2 Bendix/King Autopilots

To select and maintain a vertical speed:

1. Press and hold the VS button on the PFD to synch the VS to current vertical speed and engage vertical speed mode.
2. Select the desired vertical speed with the PFD vertical speed bug.

NOTE

When VS mode is engaged, the VS bug will be synced to the aircraft's current vertical speed and the selected VS with flash momentarily. VS is displayed in green text in the upper right corner of the PFD to indicate that VS mode is engaged.

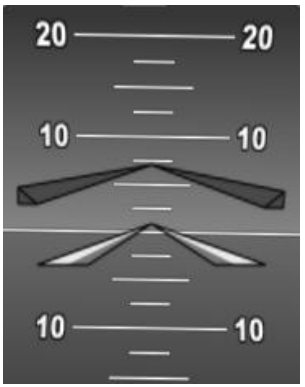
While VS mode is engaged, the vertical speed bug may be changed by:

- Adjust the vertical speed bug with the PFD knob, or
- Press and hold the vertical trim rocker switch on the autopilot in the desired direction, or
- Press the CWS button on the control wheel to synchronize the vertical speed bug to the current vertical speed.

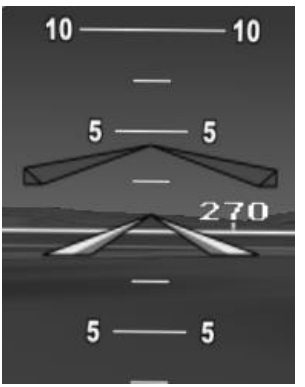
4.6.8 Flight Director Display

If autopilot flight director commands are interfaced to the G500/G600, they will be presented as a single cue flight director on the PFD. Control of the flight director is accomplished via the autopilot/flight director controller; there are no pilot controls or adjustments for the flight director on the G500/G600.

The G500/G600 system limits the distance the flight director pitch commands may deviate from the aircraft attitude icon. In the event that the pitch command provided by the autopilot flight director is greater than the distance allowed by the G500/G600, the command bars will be displayed at the maximum distance allowed by the G500/G600. As the aircraft pitch changes to satisfy the command bars, the bars will continue to be displayed at the maximum distance from the aircraft attitude icon until the aircraft pitch deviation is within the command display limit. In both examples below, the flight director is commanding approximately 7 degrees pitch up. With SVT turned off, the 7 degree pitch up command is displayed with the command bar at 7 degrees pitch up. With SVT turned on, the G500/G600 limits the command bar shown as 4.5 degrees pitch up, which is the maximum deviation that can be displayed. The G500/G600 system will hold the command bars at the same distance from the aircraft icon until the aircraft pitch attitude is within 4.5 degrees of the command.



SVT Off



SVT On

4.6.9 GAD 43 Operation

The GAD 43 Adapter may provide attitude, heading, and barometric correction information from the G500/G600 System to the autopilot. The GAD 43 can also be configured to provide synchro heading output to other systems and its attitude output can be used for RADAR stabilization. The GAD 43 has the ability to disconnect the autopilot if an error in the GAD 43 output or GRS 77 is detected. This disconnect mechanism must be tested prior to each flight in the following manner:

1. Upon startup, an AP TEST soft key will be available on the PFD side of the display.
2. Engage the AP while on the ground.
3. Press the AP TEST soft key and verify that the autopilot disconnects.

CAUTION

Do not use the autopilot if the AP TEST key fails to disengage the autopilot normally.

NOTE

Pressing and holding the AP TEST key for longer than 1 second will prevent the test from running and the AP TEST key will remain displayed.

Do not engage the autopilot if advisory "AC Reference Lost" or "Reference Timeout Fault" is present.

4.6.10 Dual G500/G600 Autopilot Interface

If the installation has dual G500/G600 systems installed, control of navigation course, heading, or altitude data affecting the autopilot from the co-pilot side can only be made if the systems are synchronized with each other. Refer to the Garmin G500/G600 Cockpit Reference Guide for additional information.

4.7 TAWS

At system startup verify that the TAWS SYSTEM TEST audio message is loud and compelling. Adjust headset volumes as necessary.

4.8 Radar Altimeter

If the installation of the G500/G600 is interfaced to a radar altimeter the radar altitude can be displayed on the PFD. If the installed radar altimeter includes self-test capability the Test controls are provided on the AUX/System Setup age. Refer to the Radar Altimeter user documentation for information about values displayed during Test. Note, for KRA 405 Radar Altimeters the displayed Test value will be between 25 and 50ft.

Section 5. PERFORMANCE

No change.

Section 6. WEIGHT AND BALANCE

See current weight and balance data.

Garmin also provides a detailed G500/G600 Pilot's Guide P/N 190-00601-02. This reference material is not required to be on board the aircraft but does contain a more in depth description of all the functions and capabilities of the G500/G600.

7.1 Databases

The G500/G600 utilizes several databases. Database titles display in yellow if expired or in question (Note: the G500/G600 receives the calendar date from the GPS, but only after acquiring a position fix). Database cycle information is displayed at power up on the MFD screen, but more detailed information is available on the AUX pages. Internal database validation prevents incorrect data from being displayed.

The upper Secure Digital (SD) data card slot should be vacant as it is used for software maintenance and aviation database updates only. The lower data card slot should contain a data card with the system's terrain / obstacle information and optional data including Safe Taxi, FliteCharts and ChartView electronic charts.

The terrain databases are updated periodically and have no expiration date. Coverage of the terrain database is between North 75° latitude and South 60° latitude in all longitudes.

The obstacle database contains data for obstacles and wires that pose a potential hazard to aircraft. Obstacles 200 feet and higher are included in the obstacle database. Wires which have been identified as a hazard to fixed wing aircraft are included in the database. It is very important to note that not all obstacles or wires are necessarily charted and therefore may not be contained in the obstacle database. Coverage of the obstacle database includes the United States and Europe. Wire coverage is limited to the United States. This database is updated on a 56-day cycle.

The Garmin SafeTaxi database contains airport diagrams for selected airports. This database is updated on a 56-day cycle.

The Garmin FliteCharts or Jeppesen ChartView electronic charts database contains procedure charts for the coverage area purchased. An own-ship position icon will be displayed on these charts when the aircraft icon on the chart page is not X'd. This database is updated on a 28-day cycle. If not updated within 180 days of the expiration date, FliteCharts or ChartView will no longer function.

The airport directory database contains information on landing facilities, such as operating hours, services available, and transportation/lodging resources. Airport directory information may be available from multiple sources and coverage areas. This database is updated on a 56-day cycle.

7.2 Electric Standby Attitude Gyro

If an electric standby attitude gyro is installed, the gyro operates from the aircraft electrical system with a dedicated emergency battery specific to the electric gyro. The electric attitude gyro battery capacity may vary considerably depending on temperature, charge status, and battery life condition. Low temperatures below 32°F will temporarily degrade battery capacity. Internal chemistry will slowly degrade battery capacity over several years of operation even when correctly maintained. A poorly maintained battery will suffer accelerated degradation. Extended storage in a discharged state and over-charging will permanently damage the battery. Complete charging is required to bring the battery up to full capacity if it has been unused for more than four months or partially discharged.

7.3 Autopilot Interface

The G500/G600 acts as a navigation source switching hub to an interfaced autopilot when multiple navigation sources are available. The autopilot will only couple to the heading, navigation, altitude, and vertical speed selections on PFD 1. Some autopilots may have navigation source selection integral to their system; this feature is overridden by the G500/G600 navigation source selection described herein. Changing the navigation sources displayed on the HSI (by pressing the CDI button or the 1-2 button) may result in some autopilots disconnecting or entering a wings level mode.

7.4 TAWS Function [GDU 620 Units with internal TAWS]

In Dual G600 installations, TAWS audio is only provided by the Pilot side GDU. If the Pilot side GDU TAWS becomes inoperative, the Co-Pilot side GDU TAWS visual annunciations may still function, but the aural TAWS alerts will not be heard.

7.5 TAWS Annunciations on the PFD [from a Garmin navigator]

The G500/G600 will display TAWS (Terrain Awareness and Warning System) annunciations on the PFD if the G500/G600 is interfaced to a Garmin navigator with integrated TAWS on GPS 1. The required TAWS annunciations appear in the upper right of the PFD. These annunciations include PULL UP (red), TERRAIN (yellow), TER N/A (yellow), TER INHB (white). These annunciations are not relative to the terrain displayed on the MFD or the yellow/red terrain shading of the Synthetic Vision displayed on the PFD of the G500/G600 system. Refer to the Garmin navigator Airplane Flight Manual Supplement for proper pilot action and information on these alerts.

TAWS alerts on the PFD of the G500/G600 System are only displayed from the GPS/TAWS navigator interfaced as GPS 1 and are displayed regardless of the system 1-2 setting, which drives all other PFD and MFD data used by the G500/G600.

7.6 StormScope®

When optionally interfaced to a StormScope® weather detection system, the G500/G600 may be used to display the StormScope® information. Weather information supplied by the StormScope® will be displayed on the StormScope® page of the G500/G600 system and may be overlaid on the map page. For detailed information about the capabilities and limitations of the StormScope® system, refer to the documentation provided with that system.

7.7 ADS-B Traffic System Interface

The G500/G600 system can be interfaced to sources of ADS-B traffic. The *nose* of the ownship symbol on both the G500/G600 main map page and dedicated traffic page serves as the actual location of your aircraft. The *center* of the traffic target icon serves as the reported location for the target aircraft. Motion vectors for traffic may be displayed in either absolute or relative motion. The location of the traffic targets relative to the ownship are the same, regardless of the selected motion vector.

Absolute motion vectors are colored white and depict the reported track of the traffic target referenced to the ground. An absolute motion vector pointed towards your ownship symbol *does not* necessarily mean the traffic target is getting closer to your aircraft.

Relative motion vectors are colored green and depict the motion of the traffic target relative to your ownship symbol. The direction the traffic target is pointed may vary greatly from the motion vector and a target may be getting closer to your aircraft independent of the direction the target is pointed. A green relative motion vector pointed towards your ownship indicates that the traffic target *is* converging on your aircraft.

Traffic targets displayed on the dedicated traffic page may be selected using the MFD knobs in order to obtain additional information about a traffic target.

7.8 Flight Plan

The Flight Plan shown on the GDU 620 is the same as that provided by the GPS navigation source selected on the PFD. When waypoints are removed from the Flight Plan on the GPS navigator or when the entire flight plan is deleted it may take as long as 20 seconds for the change to be reflected on the G500/600 Flight Plan page and map.

7.9 GWX 70 Weather Radar

The GWX 70 Weather Radar uses Doppler technology to provide advanced features to the flight crew such as turbulence detection and ground clutter suppression. The turbulence detection function can only detect turbulence between 2.5nm and 40nm ahead of the aircraft. The display of turbulence is only provided when the radar range is set to 160nm or less.

NOTE

Turbulence detection does not detect all turbulence especially that which is occurring in clear air. The display of turbulence indicates the possibility of Severe or greater turbulence, as defined in the Aeronautical Information Manual.

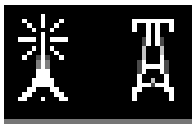
7.10 Depiction of Obstacles and Wires

7.10.1 Dedicated Terrain Page

The dedicated Terrain page will always depict point obstacles at zoom scales of 10 nm or less and depict wire obstacles at zoom scales of 5 nm or less. The obstacle or wire overlay icon, shown below, will be shown near the bottom of the display when the obstacle or wire depiction is active based on the zoom scale.

NOTE

The Obstacle or Wire Overlay Icon is displayed when wires or obstacles will be available on the Terrain Page based on the zoom scale. Only obstacles and wires within 2,000 ft vertically of the aircraft will be drawn on the Terrain Page.



Obstacle Overlay Icon (Left), Wire Overlay Icon (Right)

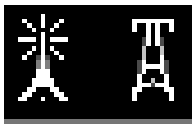
7.10.2 Map Page

The Map page may be configured to depict point obstacles and wire obstacles at various zoom scales by the pilot by using the Map page menu. The obstacle or wire overlay icon (shown below) will be shown near the bottom of the display when the obstacle or wire overlay is active based on the current zoom scale and setting selected by the pilot.

The settings chosen by the pilot on the Map page menu (including obstacle and wire display ranges) are saved over a power cycle.

NOTE

The Obstacle or Wire Overlay Icon is displayed when wires or obstacles will be available on the Map Page based on map setup and the zoom scale. Only obstacles and wires within 2,000 ft vertically of the aircraft will be drawn on the Map Page.



Obstacle Overlay Icon (Left), Wire Overlay Icon (Right)

NOTE

The Map page may be configured by the pilot to not show any obstacles or wires at any zoom scale.